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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/346,559
Filing Date: June 30, 1999
Appellant(s): GOLDBERG ET AL.

Patrick JS Inouye
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 14 November 2006 appealing from the Office action mailed 05 June 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,898,779	SQUILLA ET AL	4-1999
5,157,726	MERKLE ET AL	10-1992
5,946,103	CURRY	8-1999
5,486,686	ZDYBEL ET AL	1-1996
6,111,953	WALKER ET AL	8-2000

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1-3, 5, 7-8, 12-13 and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Squilla (US Patent 5,898,779).

Regarding claim 1: Squilla discloses a method for authenticating a hardcopy document (column 9, lines 16-21 of Squilla), comprising the steps of recording in a memory a scanned representation of the hardcopy document at a selected resolution (column 9, lines 22-26 of Squilla). Squilla teaches that images can be scanned in by a scanner and stored in computer memory (column 9, lines 16-26 of Squilla). As is well-known in the art, scanners scan in hardcopy versions of documents, images, *et cetera*. Further, a selected resolution for the scanner is inherent in the operation of scanning with said scanner since the scanner requires a particular resolution for obtaining the digital image data from the hardcopy document.

Squilla further discloses generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and arranging in the memory the scanned representation of the hardcopy document with a digital encoding of the authentication token (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a signed and authenticated hardcopy document (column 5, lines 41-50 of Squilla).

Regarding claim 2: Squilla discloses recording a scanned representation of the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); decoding the authentication token from the scanned representation of the signed hardcopy document (column 9, lines 11-18 of Squilla); authenticating the lossy compressed image data (column 8, lines 50-51 of Squilla) using one of the

encrypted image data and the hashed encrypted image data (column 8, lines 44-49 of Squilla); and decompressing the authenticated lossy compressed image data (column 9, lines 6-11 of Squilla) for comparison with the signed hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla).

Regarding claim 3: Squilla discloses visually comparing the signed hardcopy document with the authenticated lossy compressed image data (figure 9 and column 8, lines 1-16 of Squilla).

Regarding claim 5: Squilla discloses that said step of producing an authentication token is performed with a private key (column 7, lines 21-24 and column 9, lines 33-35 of Squilla) and said step of authenticating lossy compressed image data is performed with a public key (column 7, lines 59-63 of Squilla).

Regarding claim 7: Squilla discloses the step of encoding the authentication token in embedded data (column 8, lines 47-49 of Squilla).

Regarding claim 8: Squilla discloses that said encoding step encodes the authentication token in a halftone pattern (column 8, lines 44-49 and lines 58-62 of Squilla). The authentication token is encoded in the image data (column 8, lines 44-49 of Squilla), which is then printed (column 8, lines 59-62 of Squilla). Thus, the authentication token is encoded in a halftone pattern, specifically the halftone pattern inherently required to print the image.

Regarding claim 12: Squilla discloses that said step of generating lossy compressed image data loses document formatting contained in the scanned representation of the hardcopy document (column 8, lines 20-30 of Squilla).

Regarding claim 13: Squilla discloses that said step of generating lossy compressed image data further comprises the step of compressing the scanned representation of the hardcopy document by identifying exemplars and locations of exemplars (figure 1c(17) and column 5, lines 9-15 of Squilla);

each exemplar identified representing one or more image segments from the scanned representation of the hardcopy document (figures 1a-1c and column 5, lines 9-15 of Squilla).

Regarding claim 21: Squilla discloses a system (figure 2 of Squilla) for authenticating a scanned representation of a hardcopy document (column 9, lines 16-21 of Squilla), comprising an image compression module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); an authentication token generator (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and an encoding module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for arranging the scanned representation of the hardcopy document with a digital encoding of the authentication token (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a signed and authenticated hardcopy document (column 5, lines 41-50 of Squilla). The signal processing section (figure 2(26) of Squilla) performs the signal processing of the captured digital image data (column 4, lines 43-46 of Squilla). Thus, the image compression module, authentication token generator, and encoding module are each a respective portion of the physically embodied computer processing code which is executed by said signal processing section to perform the corresponding functions on the digital image data.

Regarding claim 22: Squilla discloses a memory (figure 2(64) and column 6, lines 33-37 of Squilla) for recording the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); a decoding module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for decoding the signed hardcopy document to define decoded signed image data (column 9, lines 11-18 of Squilla); an

authentication module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for authenticating the decoded signed image data (column 8, lines 50-51 of Squilla) using one of the encrypted image data and the hashed encrypted image data to define authenticated image data (column 8, lines 44-49 of Squilla); a decompression module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for decompressing the authenticated image data to define compressed image data (column 9, lines 6-11 of Squilla); and means for comparing (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) the signed hardcopy document with the authenticated hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla). The signal processing section (figure 2(26) of Squilla) performs the signal processing of the captured digital image data (column 4, lines 43-46 of Squilla). Thus, the decoding module, authentication module, decompression module, and means for comparing are each a respective portion of the physically embodied computer processing code which is executed by said signal processing section to perform the corresponding functions on the digital image data.

Regarding claim 23: Squilla discloses that said image compression module compresses the scanned representation of the hardcopy document by identifying exemplars and locations of exemplars (figures 1A-1C and column 5, lines 4-13 of Squilla); each exemplar identified representing one or more image segments from the scanned representation of the hardcopy document (figure 9 and column 9, lines 26-28 of Squilla).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Merkle (US Patent 5,157,726).

Regarding claim 4: Squilla does not disclose expressly the step of visually comparing a signed hardcopy document with a printed hardcopy document of the authenticated lossy compressed image data.

Merkle discloses the step of visually comparing a signed hardcopy document with a printed hardcopy document of the authenticated image data (column 8, lines 37-51 of Merkle).

Squilla and Merkle are combinable because they are from the same field of endeavor, namely authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to visually inspect a signed hardcopy document with a printed hardcopy document of the authenticated image data, as taught by Merkle, wherein the authenticated image data is lossy compressed image data, as taught by Squilla. The motivation for doing so would have been to allow a customer to provide evidence of who they say they are, thus increasing the overall security of a document (column 8, lines 50-51 of Merkle). Therefore, it would have been obvious to combine Merkle with Squilla to obtain the invention as specified in claim 4.

Claims 6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Curry (US Patent 5,946,103).

Regarding claim 6: Squilla does not disclose expressly the step of encoding the authentication token in a low intensity background pattern.

Curry discloses encoding digital data in a low intensity background pattern (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would

have been obvious to a person of ordinary skill in the art to encode digital data in a low intensity background pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 6.

Regarding claim 9: Squilla does not disclose expressly that said encoding step encodes the authentication token in a hyperbolic halftone pattern.

Curry discloses encoding digital data in a hyperbolic halftone pattern (figure 3; figure 5; and column 4, lines 9-20 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in a hyperbolic halftone pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 9.

Regarding claim 10: Squilla does not disclose expressly that said encoding step encodes the authentication token in a serpentine halftone pattern.

Curry discloses encoding digital data in a serpentine halftone pattern (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in a serpentine halftone pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The

motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 10.

Regarding claim 11: Squilla does not disclose expressly that said encoding step encodes the authentication token in data glyphs.

Curry discloses encoding digital data in data glyphs (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in data glyphs, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 11.

Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Zdybel (US Patent 5,486,686).

Regarding claim 14: Squilla does not disclose expressly that said compressing step records the exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document.

Zdybel discloses that said compressing step records the exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel). By converting the human-readable text of the image into ASCII format, the

human-readable text in the bitmap will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress portions of the digital image data according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 14.

Regarding claim 15: Squilla does not disclose expressly that said compressing step records the locations of exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document.

Zdybel discloses that said compressing step records the locations of exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel). By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap, along with its location in the bitmap, will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress locations and portions of the digital image data according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page

layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 15.

Regarding claim 16: Squilla does not disclose expressly that said compressing step compresses identified portions of the image data at a plurality of compression ratios.

Zdybel discloses that said compressing step compresses identified portions of the image data at a plurality of compression ratios (column 7, line 62 to column 8, line 7 of Zdybel). By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress portions of the digital image data at different compression ratios according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 16.

Further regarding claim 17: Zdybel discloses the step of segmenting text data from pictorial data before compressing the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Walker (US Patent 6,111,953).

Regarding claim 18: Squilla discloses a method for authenticating a hardcopy document (column 9, lines 16-21 of Squilla), comprising the steps of recording in a memory a scanned representation of the hardcopy document at a selected resolution (column 9, lines 22-26 of Squilla). Squilla teaches that images can be scanned in by a scanner and stored in computer memory (column 9, lines 16-26 of Squilla). As is well-known in the art, scanners scan in hardcopy versions of documents, images, *et cetera*. Further, a selected resolution for the scanner is inherent in the operation of scanning with said scanner since the scanner requires a particular resolution for obtaining the digital image data from the hardcopy document.

Squilla further discloses generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and arranging in the memory a digital encoding of the authentication data (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a hardcopy document containing the digital encoding of the authentication data (column 5, lines 41-50 of Squilla).

Squilla does not disclose expressly that said hardcopy document rendered at said printer is a label.

Walker discloses printing digitally encoded authentication data on a label (column 4, lines 31-35 of Walker).

Squilla and Walker are combinable because they are from the same field of endeavor, namely digital data encryption and authentication. At the time of the invention, it would have been obvious to a

person of ordinary skill in the art to specifically print a label, as taught by Walker, as the type of rendered hardcopy document taught by Squilla. The suggestion for doing so would have been that a label is one of many different types of possible hardcopy outputs that can be used depending upon the particular desires and requirements of the user. Therefore, it would have been obvious to combine Walker with Squilla to obtain the invention as specified in claim 18.

Further regarding claim 19: Walker discloses the step of fixedly attaching the label to the hardcopy document to produce a signed hardcopy document (column 4, lines 34-35 of Walker).

Regarding claim 20: Squilla discloses recording a scanned representation of the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); decoding the authentication token from the scanned representation of the signed hardcopy document (column 9, lines 11-18 of Squilla); authenticating the lossy compressed image data (column 8, lines 50-51 of Squilla) using one of the encrypted image data and the hashed encrypted image data (column 8, lines 44-49 of Squilla); and decompressing the authenticated lossy compressed image data (column 9, lines 6-11 of Squilla) for comparison with the signed hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla).

(10) Response to Argument

Regarding page 7, line 17 to page 13, line 13:

*First, **Appellant provides** an overview of the reference relied upon by Examiner in rejecting the claims* [see page 7, line 17 to page 10, line 12 of Appeal Brief].

Examiner replies that Examiner does not dispute Appellant's characterizations of each of the references, except to point out that Appellant's characterizations are merely personal summaries and do

not exhaustively discuss the myriad technical details present within each reference. Examiner would like to point out that patents are relevant as prior art for all they contain [see MPEP §2123].

Appellant argues that Squilla (USPN 5,898,779) allegedly fails to disclose rendering at a printer a signed hardcopy document [see page 11, lines 6-30 of Appeal Brief]. Appellant states that Squilla discloses authenticating digital images in electronic form, and not from a hardcopy document. Appellant further states that Squilla does not render at a printer a signed hardcopy document, as recited in claim 1.

Examiner replies that, as noted above, patents are relevant as prior art for all they contain, which includes non-preferred embodiments [see MPEP §2123.I]. While the primary embodiment of Squilla does operate solely in digital format, Squilla also teaches alternate embodiments which fully anticipate claim 1. Firstly, Squilla does teach "recording in a memory a scanned representation of the hardcopy document at a selected resolution", as expressly recited in claim 1. Column 9, lines 16-26 of Squilla describes the input of the image data, including recording in a memory a scanned representation of the hardcopy document. Specifically, column 9, line 26 of Squilla states: "Alternatively, the images can be scanned by a scanner 104." As is well-known in the art, a scanner scans in hardcopies of documents, images, *et cetera*, thus producing a digital version of the hardcopy in computer memory. A selected resolution is inherent in the operation of a scanner since a scanner requires a particular resolution for obtaining a digital image data from a hardcopy document.

Furthermore, Squilla also teaches outputting a hardcopy document (column 8, lines 58-62 of Squilla). Specifically, Squilla states "display or print a portion of the scene content" [emphasis added]. Again, an alternate embodiment set forth by Squilla does teach the disputed limitation of claim 1. While not the preferred embodiment, it is an alternate embodiment fully taught by the reference.

Appellant argues that Squilla fails to disclose hashed encrypted image data including lossy compressed image data and an encrypted hash of the lossy compressed image data [see page 12, lines 1-13 of Appeal Brief].

Examiner replies that the image data is first compressed in a lossy format (column 8, lines 34-44 of Squilla) prior to hashing (column 8, lines 38-40 of Squilla). The selected authentication region is a part of the lossy compressed image data which is then hashed (column 8, lines 35-40 and lines 44-47 of Squilla), thus creating a hash of the lossy compressed image data along with the lossy compressed image data. The selected authentication data is then encrypted (column 8, lines 47-49 of Squilla), thus creating an encrypted hash of the lossy compressed image data. Finally, the authentication process is applied to the compressed data file instead of the uncompressed file (column 8, lines 50-51 of Squilla). So, Squilla thus teaches that the authentication token includes lossy compressed image data and an encrypted hash of the lossy compressed image data.

Appellant argues that claims 2-3, 5, 7-8 and 12-13 are patentable (1) owing to their dependencies from claim 1; (2) due to Squilla allegedly only teaching digital processing, and not processing with respect to hardcopy documents; (3) due to Squilla allegedly not teaching encoding the authentication token in embedded data, as required by claim 7; and (4) due to Squilla allegedly not teaching encoding the authentication token in a halftone pattern, as required by claim 8.

Examiner replies that, since claim 1 has been shown to be anticipated by Squilla, claims 2-3, 5, 7-8 and 12-13 cannot be considered patentable merely due to their respective dependencies. Secondly, as set forth above, Squilla does teach scanning in a hardcopy document and printing out a hardcopy document as an alternate embodiment. Thus, the disputed language of claims 2 and 3 are taught by Squilla. Thirdly, Squilla does teach encoding the authentication token in embedded data, as required by claim 7. Column 8, lines 47-49 of Squilla demonstrate encoding (hashing and encrypting) authentication data ("photographer's information") into the hashed image data file as appended (and thus embedded) data. Finally, Squilla does teach encoding the authentication token in a halftone pattern, as required by claim 8. The authentication token is encoded in the image data (column 8, lines 44-49 of Squilla), which

is then printed (column 8, lines 59-62 of Squilla). Thus, the authentication token is encoded in a halftone pattern, specifically the halftone pattern inherently required to print the image.

Regarding page 13, line 14 to page 15, line 17:

Appellant repeats arguments that Squilla allegedly fails to disclose rendering at a printer a signed hardcopy document; and that Squilla allegedly fails to disclose hashed encrypted image data including lossy compressed image data and an encrypted hash of the lossy compressed image data. ***Examiner*** has fully addressed these arguments above.

Regarding page 15, line 18 to page 18, line 22:

Appellant argues separately that each of the three "prongs" required for a *prima facie* case of obviousness have not been met.

Examiner addresses the third argument [see page 15, lines 22-27 and page 17, line 31 to page 18, line 22 of Appeal Brief] first, since the other two arguments largely hinge upon the third argument. ***Appellant argues*** that Squilla fails to teach all of the claim elements recited in claim 1, upon which claim 4 depends. ***Examiner replies*** that, as set forth in detail above, Squilla has been shown to teach each and every limitation recited in claim 1, including: rendering at a printer a signed hardcopy document; and hashed encrypted image data including lossy compressed image data and an encrypted hash of the lossy compressed image data. Appellant's arguments with respect to lack of motivation [see page 16, line 3 to page 17, line 12 of Appeal Brief] and lack of reasonable expectation of success [see page 17, line 13 to page 18, line 14 of Appeal Brief] hinge largely upon the allegation that Squilla is not applicable to hardcopy input and output, which Examiner has shown otherwise in the arguments above.

Appellant argues that Examiner has not provided some suggestion or motivation to combine the Squilla and Merkle (USPN 5,157,726) references since Squilla teaches a system for generating and

attaching a digital signature to a digital image file, whereas Merkle teaches a system for printing a digitally cleaned hardcopy image [see page 16, line 5 to page 17, line 12 of Appeal Brief].

Examiner replies that Squilla also teaches inputting image data by scanning in a hardcopy document and rendering at a printer a signed hardcopy document, which is based on an alternate embodiment of Squilla, as discussed in detail above. Thus, Squilla and Merkle are clearly within the same field of endeavor, namely authentication and encoding of document data. Furthermore, Examiner has provided a clear motivation that one of ordinary skill in the art at the time of the invention would have had to combine the teachings of Merkle with the system of Squilla, specifically allowing a customer to provide evidence of who they say they are, thus increasing the overall security of a document (column 8, lines 50-51 of Merkle) [see page 8, lines 1-13 of the previous office action, mailed 05 June 2006]. The motivation to combine is not only relevant to the hardcopy document systems of Squilla and Merkle, but also comes directly from the Merkle reference itself, and not from Appellant's disclosure.

Appellant argues that there would not be a reasonable expectation of success since Squilla teaches authenticating digital images using a region of interest, whereas Merkle teaches authenticating documents with a digital signature including the whole document [see page 17, lines 13-30 of Appeal Brief].

Examiner replies that, again, Squilla teaches more than purely digital processing. As set forth in detail above, Squilla also teaches digital authentication in the context of hardcopy documents. Thus, applying the teachings of Merkle relied upon in the rejection of claim 4 [see last paragraph of page 7 of said previous office action] is clearly appropriate. Simply visually comparing the signed hardcopy document with a printed hardcopy document of the authenticated image data is clearly a teaching that can be applied to Squilla since both the signed hardcopy document and the printed hardcopy document are taught by Squilla. All that Merkle is relied upon for is the teaching with respect to visually comparing the

two documents. A visual inspection of two hardcopy documents clearly does not require some great inventive leap.

Regarding page 18, line 23 to page 19, line 6:

Appellant argues that Squilla does not teach all of the claim elements of claims 6 and 9-11 since Squilla does not teach all of the claim elements of claim 1, from which claims 6 and 9-11 depend. Thus, Appellant alleges that there is no motivation to combine Squilla with Curry (USPN 5,946,103).

Examiner replies that, as demonstrated in the above arguments, an alternate embodiment of Squilla does in fact fully teach each and every limitation of claim 1. Thus, claims 6 and 9-11 cannot be considered patentable merely due to their respective dependencies from claim 1. Furthermore, motivation to combine Curry with Squilla is clearly given in said previous office action [see page 8, line 30 to page 9, line 3; page 9, lines 18-21; page 10, lines 5-8; and page 10, lines 22-24 of said previous office action].

Regarding page 19, line 7 to page 22, line 1:

Appellant argues that Squilla and Zdybel (USPN 5,486,686) are not properly combinable since there is no motivation to combine Squilla and Zdybel [see page 19, line 10 to page 20, line 13 of Appeal Brief].

Examiner replies that Squilla and Zdybel are both within the field of digital authentication and encoding of document data, and are thus analogous art. The motivation to combine Squilla and Zdybel was clearly provided by Examiner in said previous office action [page 11, lines 22-26; page 12, lines 12-22; and page 13, lines 5-16 of said previous office action].

Appellant argues that there is no reasonable expectation of success if the teachings of Zdybel were to be combined with the teachings of Squilla [see page 20, lines 14-27 of Appeal Brief].

Examiner replies that Appellant is relying upon generalizations of the references, and does not address the specific teachings set forth in said previous office action, along with the specific manner in which Examiner has combined the references. Pages 11-13 of said previous office action detail, among other things, the precise teachings of Zdybel upon which Examiner has relied and how those teachings are used to modify the Squilla reference to obtain the inventions specified in recited claims 14-17. Appellant does not substantively address any of these citations or combinations.

Appellant argues that Zdybel does not teach the specific limitations recited in claims 14-16 [see page 20, line 28 to page 22, line 1 of Appeal Brief].

Examiner replies that Zdybel discloses a compressing step that records the exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel), as specifically required by claims 14 and 15. By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla. Basically, ASCII format converts a human-readable text in the bitmap into an 8-bit string representing the character. This is clearly greater compression than the number of bits required to actually display the text character as part of the image. Each individual character requires at least one bit for each point required to render the character, which is generally greater than 8. Since there is a greater compression ratio for human-readable characters in the image data than for the rest of the image data, then identified portions of the image data are compressed at a plurality of compression ratios, as required by claim 16.

Regarding page 22, line 2 to page 24, line 11:

Appellant argues that there is no motivation to combine Squilla and Walker (USPN 6,111,953) [see page 22, line 5 to page 23, line 1 of Appeal Brief].

Examiner replies that Squilla and Walker are both within the same field of endeavor, namely digital data encryption and authentication. Thus, both Squilla and Walker are analogous art. Examiner has clearly provided motivation to combine the specific teachings of Walker that have been relied upon to reject claims 18-20 with the Squilla reference. In claim 18, Squilla merely does not teach that the hardcopy document rendered at the printer is specifically a label. Walker does teach printing digitally encoded authentication data on a label (column 4, lines 31-35 of Walker). On page 14, line 28 to page 15, line 8 of said previous office action, Examiner clearly sets forth how these two reference are combined, along with a suggestion to combine the references that would have been easily within the grasp of one of ordinary skill in the art at the time of the invention. Thus, the combination of references is clearly proper.

Appellant argues that there is no reasonable expectation of success [see page 23, lines 2-17 of Appeal Brief].

Examiner replies that Appellant is again relying upon generalizations of the references and is not substantively addressing the combination as clearly set forth in said previous office action. The only difference between Squilla and recited claim 18 is that the hardcopy document rendered at the printer is not disclosed to specifically be a label. The choice of a specific type of hardcopy medium is clearly a modification to Squilla that would readily be successful. Even common users of printers can select to print on labels rather than, for example, A4 size paper. Certainly one of skill in the art can make such an easy modification to the system set forth in Squilla.

Appellant argues that Squilla and Walker do not fully teach the limitations of claim 18 [see page 23, line 18 to page 24, line 8 of Appeal Brief].

Examiner replies that the limitations in question are the same limitations argues with respect to claim 1, which have already been shown above to be fully taught by Squilla.

Appellant argues that claims 19 and 20 are patentable owing to their dependencies from claim 18 [see page 24, lines 9-11 of Appeal Brief].

Examiner replies that, since claim 18 has been shown to be unpatentable over Squilla in view of Walker, claims 19 and 20 cannot be considered patentable owing merely to their respective dependencies from claim 18.

Regarding page 24, lines 12-17:

In conclusion, all of the claims appealed in Appellant's present Appeal Brief have been shown to have been properly rejected by Examiner in the previous office action mailed 05 June 2006.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.